

REMARKS

The Abstract has been amended to be a single paragraph in view of the guidelines set forth in MPEP 608.01(b)C. The claims have been amended to recite that elastomeric film layer comprises polyurethane based on the disclosure at page 6, line 30 in the present application. In this regard, the "elastic polymer" in treatment liquid has been amended to a "polyurethane-based elastic polymer". Also, claim 14 has been amended to add an "attaching step" that the fibrous substrate and the elastomeric film layer are attached so that the treatment liquid infiltrates into the fibrous substrate based on the disclosure at page 14, lines 5-16 of the present application. In addition, the claims have been amended to recite treatment liquids (A), (B) and (C) to further clarify the claim language. In this regard, the term "treatment liquid is disclosed at page 14, line 12 of the present application. Claim 19 has been added reciting the "silicone compound" as a "reactive H-silicone compound containing Si-H groups" based on the disclosure at page 10, lines 9-10 in the present application.

Entry of the above amendment is respectfully requested.

Restriction Requirement

On page 2 of the Office Action, the Examiner sets forth the restriction requirement originally issued by telephone. The Examiner notes that a provisional election was made without traverse to prosecute the invention of Group II, claims 14-18, and that affirmation of this election must be made by Applicants in replying to this Office Action.

In response, Applicants hereby affirm the election of Group II, claims 14-18, drawn to a process for producing a leather-like sheet material, without traverse. Applicants submit that newly added claim 19 is also directed to a process for producing a leather-like sheet material and thus should be considered as an elected claim as well.

Obviousness Rejections

On page 3 of the Office Action, claims 14, 15, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (JP 2001-348786) in view of Hanada et al. (U.S. Patent 4,853,418), Retzsch (U.S. Patent 4,018,559), or Sagiv et al. (U.S. Patent Application Publication 2002/0002232). On page 5 of the Office Action, claims 14, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamai (JP 06-106682) in view of Kikuchi and Hanada or Retzsch. On page 6 of the Office Action, claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi and Hanada, Retzsch, or Sagiv as applied to claims 14, 15, 17, and 18 or alternatively, Tamai and Kikuchi and Retzsch or Sagiv as applied to claims 14, 15, and 17, and each further in view of Sato et al. (JP 63249787).

Applicants respectfully submit that the present invention is not obvious over the cited art combinations, and request that the Examiner reconsider and withdraw these rejections in view of the following remarks.

1) Rejections involving Kikuchi (JP 2001-348786) as the primary reference

(1) Kikuchi is silent about an adhesive containing a silicon compound, as the Examiner has indicated.

(2) Hanada (USP 4,853,418) and Retzsch (USP 4,018,559) disclose a solvent-based surface layer containing silicone compound.

However, Hanada and Retzsch are silent about a water-based adhesive layer. Hanada and Retzsch are silent about the feature that the adhesive layer infiltrates into a fibrous substrate, since Hanada and Retzsch only mention about a surface layer.

(3) Sagiv (US 2002/0002232) is completely silent about a leather-like sheet made of a fibrous substrate and an elastomeric film layer.

(4) The Examiner indicates that a water-based adhesive is well known in the leather-like sheet field, in accordance with the description of Sagiv. However, Applicants submit that the Examiner's reliance on Sagiv is not appropriate, because the purpose of Sagiv is to prevent air entrapment during processing and to provide a smooth adhesive layer.

In contrast to this, the present invention is directed to a leather-like sheet and the adhesive layer infiltrates into the fibrous substrate. The adhesive layer of the present invention does not require smoothness, since the adhesive layer infiltrates into the fibrous substrate. "Air entrapment" is irrelevant to the present invention. Therefore, there is no reason to refer to the disclosure of Sagiv.

The purpose of Sagiv is to bond material having a smooth surface such as aluminum or an ABS resin. In contrast to this, the purpose of the present invention is to bond the elastomeric film layer and the fibrous substrate having a surface with a lot of voids. In the present invention, "smoothness" or "air entrapment" is not required at all.

(5) The advantage of a silicone compound infiltrating into the fibrous substrate is achieved and disclosed for the first time in the present invention, and is neither taught nor suggested nor otherwise obvious from the cited art, including Hanada and Retzsch. Also, Sato does not make up for the deficiencies in the other cited art.

2) Rejections involving Tamai (JP 06-106682) as the primary reference

(1) Tamai is silent about an adhesive layer containing water and a silicone compound, as the Examiner acknowledges. The film layer of Tamai is not a film layer comprising polyurethane. Further, styrene-butadiene-based rubber is a strong adhesive in a solvent-based system, but it does not show adhesion in a water-based system. The adhesive layer of Tamai does not show any adhesion in the water-based system of the present invention.

(2) Hanada and Retzsch disclose a solvent-based surface layer containing a silicone compound on a leather-like sheet. However, Hanada and Retzsch are silent about a water-based adhesive layer. Further, Sagiv is deficient as discussed above, and Sato does not make up for the deficiencies in the other cited art.

The present invention is different from the cited references in that the elastic polymer is water-based and not solvent-based, the layer containing silicone is an adhesive layer and not a surface layer, and the adhesive layer infiltrates into the fibrous substrate.

3) The advantage of present invention

(1) The cited references are silent about the treatment liquid (A) forming an adhesive layer being a water solution or water dispersion of a polyurethane-based elastic polymer and containing a silicone compound. The cited references are essentially silent about the infiltration of the treatment liquid into the fibrous substrate, since the references are irrelevant to an adhesion layer between the fibrous substrate and the elastomeric film layer.

(2) The present invention has the following advantage due to using a silicone compound in a water-based polyurethane elastic polymer.

The silicone compound forms a solidified silicone film between a fiber of the surface layer of the fibrous substrate and the surface of the adhesive due to migration thereof in the adhesive. This silicone film decreases the frictional coefficient between the fiber and the adhesive and increases the freedom of the fiber to attain flexibility. Further, the flexibility or the like moderates dynamic stimulus during friction, and even the abrasion resistance is improved (see page 10, lines 11-20 of the present application).

Thus, Applicants submit that the present invention is not obvious over the cited art combinations, and withdrawal of these rejections is respectfully requested.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Date: October 29, 2010

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